

Contact Investigations for Tuberculosis

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Objectives

- Define contact investigation (CI)
- Describe the purpose of the CI and its importance for preventing transmission
- Describe when a CI should be conducted and how it should be prioritized
- Describe communication techniques which will be helpful in the TB interview

Case Investigation (CI) Defined

A procedure for identifying contacts; people exposed to someone with suspected or confirmed pulmonary TB disease, screening those individuals for TB infection and disease, then providing appropriate treatment.

- TB Case – A person in whom *M. tuberculosis* has been detected. A case is identified, documented, and reported.
- Contact – Someone who has been exposed to *M. tuberculosis* by sharing air space with a person with infectious TB.
- Index – The first case or patient who comes to attention as sign of a potential public health problem.
- Source case or patient – The case or person who was the original source of infection for secondary cases or contacts; can be, but is not necessarily, the index case.

CI Significance and Responsibilities

- Contact investigations need complex interventions that require
 - Critical prevention strategies
 - Many interdependent decisions
 - Time-consuming involvement
- Health Departments are responsible for ensuring that contact investigations are completed
 - Each county is responsible for TB case investigation and case management in their county

Importance of Case Investigation

- CDC estimates that 9 contacts are identified for every verified pulmonary and laryngeal TB case in the US. Of those:
 - 25-30% are infected with TB
 - 1% of infected contacts have already progressed to TB disease
 - 10% of newly infected contacts will develop TB disease - 5% within 2 years
 - Contacts co-infected with HIV have a 7-10% chance per year over a lifetime for developing TB disease

Michigan Contact Follow-up 2009

	Sputum smear +		Sputum smear -, cult +	
Cases for investigation	51		27	
Number of contacts/case	1262		232	
Evaluation rate	91%	1156	83%	193
TB disease	4		1	
LTBI	14.1%	163	15.5%	30
-tx rate	83%	136	80%	24
-completion rate	51.4%	74	41.7%	10

Setting TB Control Priorities

All cases of TB were once contacts.

- Latent TB infection (LTBI) is the source of most future TB Disease.

Screening Risk Groups

- Screening populations at high-risk for TB infection and disease; helps detect infected persons, and provides treatment to prevent progression to active TB.

Establishing Investigational Priorities

- Establish priorities based upon
 - Transmission risk assessment
 - Host risk
 - Concentric circle approach
 - Contacts who are HIV infected or are young children receive highest priority.
- Cases
 - Identifying and treating persons who have active disease
- Contacts
 - Finding and screening contacts of active cases to determine whether they are
 - Infected or
 - Have active disease and provide appropriate treatment

Prioritizing Contact Investigations

■ Priority One

- Pulmonary, laryngeal or pleural disease with +smear
- Disease in children (Source -Case Investigation)

■ Priority Two

- Pulmonary disease diagnosed clinically/no microscopy when there is evidence of cavitory disease on CXR
- Recent conversion in children
- Pulmonary disease with – smear/+ culture

■ Priority Three

- Pulmonary suspect with negative or no smear and abnormal CXR consistent with TB (non-cavitory)
- Extra-pulmonary disease only if there is aerosolization

Factors and Characteristics of Index Case that Increases Risk of TB Transmission

- Anatomical site of the disease
- Positive sputum bacteriology
- Radiographic findings (ie: cavitation)
- Behaviors that increase aerosolization of respiratory secretions
- Age (children <10 rarely transmit)
- No or ineffective treatment of TB disease

Contact Investigation Steps

- Consider if index patient has
 - Confirmed or suspected pulmonary, laryngeal, or pleural TB
 - Chest radiograph consistent with pulmonary TB
- A Contact Investigation is recommended if
 - Sputum smear has AFB on microscopy
 - Chest radiograph indicates presence of cavities in the lung (even if AFB sputum smear negative)
- Persons with AFB smear or culture-positive sputum and cavitory TB assigned the highest priority
- Should not be initiated for contacts who have suspected TB disease and minimal findings in support of pulmonary TB diagnosis

Determining the Infectious Period

- Focuses investigation on contacts most likely to be at risk for infection
- Sets time frame for testing contacts
- Information to assist with determining infectious period
 - Approximate dates TB symptoms were noticed
 - Bacteriologic results
 - Extent of disease
- Start is typically 3 months before symptoms or first positive findings consistent with TB diagnosis

Closing the Infectious Period

Infectious period closed when all the following criteria are met

- Effective treatment for ≥ 2 weeks,
- Diminished symptoms, and
- Bacteriologic response

Exposure Period for Contacts

- Determined by how much time the contact spent with the index patient during the infectious period



TB Interview Defined

A TB interview is an individualized *exchange* of information

- Information flow is two way
- A dialogue – not a monologue
- As a result of this interview, contacts are identified, medically evaluated, and then treated for active disease or latent TB infection as indicated.
- This process is vital to TB elimination goals.
- TB interviews involves relationship and trust building, ongoing problem solving, needs based education, and evaluation of collected information.

Interview Techniques

- Ask/look for patient feedback (body language, questions, need for clarifications)
- Explain why certain questions are asked especially sensitive questions
- Be open to patient's own explanations/beliefs of illness
- Be aware of illness experience
- Avoid use of medical terminology
- Use open-ended questions as dialogue permits

Interviewing Techniques

- Focused questions-provide limits or boundaries
- Paraphrasing-rewording response to verify information and show active listening
- Reflection-rewords a response to include emotional response
- Summarizing-rephrasing a series of responses to verify information and show active listening

TB Interview

- Establish rapport with an index patient
- Utilize effective communication techniques to convey respect, sincerity, and confidence to the patient
- Appropriately respond to patient questions through TB education



TB Interviews

- Interviews should be conducted in person in the hospital, TB clinic, patient's home, or a convenient location that accommodates the patients privacy
- Minimum of two interviews should be conducted
 - First interview should be conducted
 - ≤ 1 business day of reporting for infectious patients
 - ≤ 3 business days for others
 - Second interview conducted 1–2 weeks later
- Additional interviews depend on the amount of information needed and time to develop rapport with patient

Cultural Competency

Health care workers should be aware of cultural diversity in everyone, but not necessarily the stereotypes

- Diversity categories

Geography, Culture, Gender, Spirituality, Language, Disability
Sexuality, Age

Culture can affect the following;

- Experience of psychological distress
- Description of symptoms of distress
- Communication about distress and its symptoms
- Attribution of illness source
- Attitudes towards helpers
- Expectations for treatment